

PROCEEDINGS
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NATURAL HISTORY OF PLUMMERS ISLAND,
MARYLAND¹

XIII. DESCRIPTIONS OF NEW WASPS FROM PLUMMERS ISLAND, MARYLAND,
(HYMENOPTERA : ACULEATA)

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The following new wasps are described at this time so that names will be available for two field projects that I have carried on at Plummers Island during the past 6 years. One of these projects is a study of the biology of solitary predaceous wasps, and bees that nest in borings in wood, and the other is the systematic collecting of both ground- and wood-nesting wasps to form the basis for an annotated list of the wasp fauna of Plummers Island.

I have named these ten new species in honor of some of the entomologists who are or were members of the Washington Biologists' Field Club. Most of them collected some of the specimens on which my annotated list of the wasps of Plummers Island will be based.

Family BETHYLIDAE

Epyris vierecki,² new species

This species is known from a small series of ten males and one female from Plummers Island, most of which were swept from vegetation. All specimens were taken in the fall. Males may be distinguished from the known males of the other eastern species by a combination of the sculpture of the U-shaped propodeal area, color of antennae and legs, and relative proportions of head and antennae. The only other eastern species known to have a brachypterous female is *Epyris brachypterus* (Ashmead), which also occurs on Plummers Island. Females of *vierecki* may be dis-

¹ A list of the titles published previously in this series will be found in No. XII, Proc. Biol. Soc. Wash. 72: 101-102, 1959. Publication costs of this number have been defrayed by the Washington Biologists' Field Club to promote its primary objective of research on the fauna and flora of Plummers Island and adjacent areas.

² For Henry Lorenz Viereck (member 1911-1931), hymenopterist, and collector of many specimens on which my list of Plummers Island wasps will be based.

tinguished from those of *brachypterus* by the sculpture of the U-shaped area on the propodeum which in the latter has strong radiating rugulae.

Type ♂: Plummers Island, Md.; 27 September 1959, K. V. Krombein. U.S. National Museum, Type No. 65882.

Male: Length 3.5 mm, forewing 2.3 mm. Black; mandible reddish on apical half; tarsi light brown; antenna and fore tibia dark brown, the former a little lighter beneath. Vestiture on head and thorax, short, grayish, subdecumbent. Forewing slightly infumated, veins brown.

Head dull, moderately alutaceous, the length from apex of clypeus to occiput 1.1 times the greatest width including eyes; front with a feeble median groove extending one-fourth the distance to anterior ocellus, and with scattered, moderately large punctures; length of head behind eyes subequal to eye length; sides of head behind eyes parallel, rounded into occiput; flagellum moderately elongate, the ratio of lengths of first four flagellar segments as 3:4:4:5, the combined length of the third and fourth flagellar segments equal to least interocular distance.

Thorax dull, weakly alutaceous except propodeum; pronotal disk with greatest width two-thirds the length, surface with punctures of same size and density as front; scutum and scutellum with smaller, sparser punctures; mesopleuron impunctate; propodeal dorsum with broad U-shaped central area with a median carina on either side of which it is weakly and irregularly ruguloso-reticulate, the sculpture becoming weaker posteriorly; on either side of this area the dorsum with weak, close transverse carinae; lateral surface of propodeum strongly alutaceous; posterior surface with a complete median carina and very weakly alutaceous.

Abdomen shining and impunctate; second tergum posterolaterally and third to seventh terga and sterna with moderately long, decumbent vestiture.

Allotype ♀: Plummers Island, Md.; 1 October 1960, K. V. Krombein. U.S.N.M.

Female: Length 3.3 mm, forewing 1.1 mm. Black, the following light reddish brown—mandible, scape, pedicel, tegula, fore tibia and all tarsi; flagellum and remainder of legs castaneous. Brachypterous, the forewing extending only about half its length beyond apex of propodeum, the wings slightly infumated. Vestiture sparse, light grayish.

Head shining, very weakly alutaceous, the front and vertex with quite scattered, moderately large punctures, the length from apex of clypeus to occiput 1.1 times the greatest width; head behind eyes about as long as eye length.

Thorax shining except propodeum, the surface very weakly alutaceous; pronotum with large punctures a little more scattered than on head, the length of dorsum three-fourths its width at posterior lobes; scutum and scutellum impunctate; propodeum dull, the dorsum with a well-developed median carina, the U-shaped area strongly alutaceous and with a few radiating irregular carinules, the dorsal surface outside the U-shaped area with close transverse, very delicate striolation.

Abdomen shining, impunctate, sides of second and third, and most of fourth to sixth terga with very scattered, rather short, suberect setae.

Paratypes: 9♂♂; Plummers Island, Md.; 12 September 1909, J. C. Crawford, 1♂; 23 September 1960, H. E. Evans, 5♂♂; 4 October 1959, K. V. Krombein, 1♂; 5 October 1958, K. V. Krombein, 1♂, on *Solidago*; 17 October 1960, K. V. Krombein, 1♂. Paratypes are in the collections of the U.S. National Museum, Museum of Comparative Zoology, and the author. The paratypes are quite similar to the type in most details. The range in length is 2.4 to 4.2 mm. The sculpture of the U-shaped propodeal area in the smaller specimens is similar to that of the allotype, and in the largest specimens it is somewhat coarser than in the type.

Family DRYINIDAE

Mesodryinus crawfordi,³ new species

M. crawfordi is readily distinguished from the other North American species, *M. americanus* (Ashmead) and *M. alatus* (Cresson), by the complete occipital carina, entirely black body, coarser sculpture, and more strongly banded wings.

Type ♀: Plummers Island, Md.; 11 July 1909, J. C. Crawford. U.S. National Museum, Type No. 65883.

Female: Length 4.2 mm, forewing 2.8 mm. Head and thorax black, abdomen castaneous except terminal segment lighter; scape, pedicel, first and last flagellar segments, and fore and mid legs beyond coxae, testaceous; mandibles and hind legs except coxae, light brown. Vestiture on head and thorax sparse, short, appressed, silvery. Wings clear except for infusate bands across the forewing, one on distal two-thirds of basal cell and the other including stigma and proximal half of marginal cell; stigma and veins light brown.

Head dull, finely granular; clypeus shallowly and narrowly emarginate at apex; malar space with a median longitudinal carina on lower third; face with a complete median carina, a narrow strip along inner eye margin on lower two-thirds with a delicate network of fine carinules superimposed on the granular surface; ocellular distance 1.5 times the postocellar distance; occipital carina complete; comparative lengths of scape, pedicel, and first three flagellar segments as 11:6:19:11:9, the combined lengths of the first three flagellar segments 0.9 times the head width including eyes.

Thorax dull, the basic sculpture finely alutaceous, except propodeum; pronotum about two-thirds as long as wide, with a weak marginal furrow anteriorly; scutum finely ruguloso-reticulate except for a median strip; postscutellum finely ruguloso-reticulate anteriorly; mesopleuron irregularly and finely ruguloso-reticulate; propodeum more coarsely ruguloso-reticulate, the dorsum longitudinally so.

Fore trochanter gradually clavate; fore femur strongly thickened, its

³ For J. C. Crawford (member 1909-1927), specialist in bees, and collector of the unique type of this new species.

length three times the greatest width; fore tibia half as wide as greatest width of femur, about four-fifths as long as fore tarsus; fore basitarsus cylindrical, about two-thirds as long as tibia, slightly hooked at apex; second tarsal segment transverse, a little hooked at apex; third tarsal segment twice as long as second and a little hooked at apex; fourth segment about two-thirds as long as first; chela of fifth segment extending back to apex of third segment, the lamellae extending almost to base of articulation; enlarged claw slightly curved, with a row of lamellae along curved edge.

Male: Unknown.

***Gonatopus curriei*,⁴ new species**

Of the described North American *Gonatopus* this appears to be closest to *ashmeadi* Kieffer with which it agrees in the light-red body color. It differs in having the abdomen also red instead of infuscated and in having the stalk of the mesonotum shining and unsculptured instead of dull and alutaceous.

Type ♀: Plummers Island, Md.; "3-8" (presumably 3 August), R. P. Currie. U.S. National Museum, Type No. 65884.

Female: Length 3.0 mm. Entirely light red except petiole of abdomen black, and the following testaceous—palpi, mandible, clypeus, lower face, antenna, and tarsi.

Head mostly shining, the anterior part of front very delicately alutaceous; upper horizontal part of front with a weak median carina extending to anterior ocellus; relative length of first three flagellar segments as 18:11:9, the combined length of these three segments subequal to head width including eyes.

Thorax shining; pronotal width three-fourths the length, the posterior margin narrowly emarginate in middle; lamellate side piece of pronotum with lower margin shallowly emarginate posteriorly; mesonotal stalk slender, polished, impunctate, about three-fifths as long as pronotum; propodeum in profile strongly rounded, the declivous posterior surface with about 15 delicate transverse carinae most of which extend onto the lateral surface.

Fore coxa elongate, about three times as long as lateral width; trochanter very slender and elongate, a little longer than fore coxa; fore tibia twice as long as coxa, thickened on basal half and slender apically; fore tibia slender, slightly curved, subequal to length of femur and also to length of tarsus exclusive of chela and claw; basitarsus slender, slightly hooked at apex; second tarsal segment transverse; third segment twice as long as second; fourth segment elongate, about equal to combined lengths of first three segments; chela extending to apex of second segment, a row of short lamellae beneath on apical half in addition to

⁴ For R. P. Currie (member 1901-1930), entomologist, clergyman, and collector of the unique type specimen of this new species.

the usual concentration at apex; enlarged claw slender, almost as long as trochanter, without a subapical tooth.

Male: Unknown.

Paratype: 1 ♀, Dunn Loring, Virginia; 30 July 1949, K. V. Krombein.

Family VESPIDAE

Rygechium schwarzi,⁵ new species

This species is deceptively similar to *R. megaera* (Lepeletier) in most details of the coloration and sculpture. It is separated at once from *megaera* by its somewhat smaller size, the lack of a carina or lateral angle on the superior margin of the propodeal concavity, by having the outer surface of the tibiae entirely white in the male and almost so in the female, and by the very much larger subapical lamella on the ventral surface of the aedeagus in the male. Occasionally, as in several specimens from Kill Devil Hills, N.C., the tibiae of male *megaera* may have some pale blotches. However, the tibiae of these individuals are never entirely white on the outer surface and the superior angles of the propodeal concavity are carinate.

Although both *megaera* and *schwarzi* are largely Lower Austral in distribution, it appears that they may be allopatric because they have never been taken in the same restricted locality.

Type ♂: Plummers Island, Md.; 6 June 1959, K. V. Krombein. U.S. National Museum Type No. 65885.

Male: Length 9.5 mm, forewing 8.0 mm. Black, the following white to ivory: Mandible except apex, clypeus, scape beneath, small circular spot above and between antennal sockets, tiny spot behind eye laterally on vertex, front half of dorsum of pronotum, narrow anterior band on postscutellum, very small round spot on mesopleuron beneath tegula, narrow apical margins of first two terga slightly narrowed anteriorly at midline, narrower band interrupted in middle posteriorly on second sternum, femora narrowly at apices, tibiae on outer surface, and middle segments of tarsi. Wings deeply infuscated.

Clypeus moderately closely punctate, the apex narrow and slightly emarginate; last flagellar segment stout, reaching base of ninth segment, the tip bluntly rounded, slightly concave beneath; interocellar area not tuberculate.

Humeral angles not prominent; postscutellum not serrate, and not produced behind into a shelf; propodeal concavity with a median ridge, weakly punctate and more closely so beneath than above, not margined by a carina above and without a lateral angle; lateral and posterior surfaces of propodeum not separated by a carina or series of serrations.

Legs unmodified.

First and second terga with moderately small, scattered punctures, separated from each other by one to two times the diameter of a puncture; third to fifth terga with coarser, subcontiguous punctures; apices

⁵ For Eugene Amandus Schwarz (member 1903-1928), naturalist and coleopterist.

of terga not thickened or reflexed; aedeagus ventrally with the usual lateral tooth at middle, but the lamella at apical third very much larger than in *megaera*.

Allotype ♀: Same locality as type, 18 July 1956, K. V. Krombein; reared from nest H#29, cell 1. U.S.N.M.

Female: Length 11.0 mm, forewing 9.5 mm. Coloration similar to male type except as follows: Mandible black except a small subbasal spot, clypeus black except for basolateral band, interantennal spot a little larger, tegula with a tiny spot at base and apex, mesopleural spot larger, femora and tarsi all black, and tibiae outwardly narrowly black at apex and base. Sculpture generally similar to male but comparatively slightly coarser: Vertexal impression oval, as wide as ocellar triangle.

Paratypes: 4♂♂, 1♀, Plummers Island, Md., 4 June 1959 (♂), 4 June 1961 (♂), 17 July 1961 (♂), 18 July 1956 (♀), 30 August 1961 (♂), and 5♂♂, 15♀♀ reared from nests H#57 and H#59 (1956), nests P#3, P#4, P#63, P#123, and P#148 (1957), nests Y#141 and Y#144 (1959), and nests K#104 and K#201 (1961), all K. V. Krombein. 1♂, Glen Echo, Md., July 1930, J. C. Bridwell. 1♀, Roxborough, Pa., 19 June 1909, G. M. Greene. 1♀, Princeton, N.J., 1 July 1950, K. W. Cooper. 3♀♀, Washington, D. C.: 24 July 1915, 1♀, W. A. Donnell; 2♀♀, W. M. Mann. 2♂♂, Arlington, Va., 25 July 1948, K. V. Krombein. 1♀, Dunn Loring, Va., 30 August 1947, K. V. Krombein. 1♀, Boggy Creek, I.T. (i.e., Oklahoma), 6 September 1904, F. C. Bishopp. Paratypes are in the collections of the U. S. National Museum, University of California at Davis, and the author.

Male paratypes range in length from 8.5 to 11 mm. They are quite similar in punctuation. Frequently the apical margin of clypeus is narrowly black. Occasionally there may be extremely narrow white bands on third and fourth terga which may be interrupted along midline, and a few specimens have very small posterolateral white spots on third to fourth or fifth sterna.

Female paratypes are 7.5 to 12.5 mm long. They are very similar to the allotype in most details. In a few specimens the tegula lacks pale spots, occasionally the clypeal band is divided into basolateral spots, and in one specimen there is a tiny spot on the scutellum.

Stenodynerus (Parancistrocerus) vogti,⁶ new species

This species is known only from the unique female type which I reared from a nest built in a boring in a wooden block at Plummers Island in 1957. It runs to *S. histrio* (Lep.) in Bohart's key to the species of this subgenus (Proc. Ent. Soc. Wash. 54: 40-43, 1952), but differs in a number of details. Bohart's couplet 26 may be modified as follows to provide for this additional species:

26. As seen in dorsal view, postscutellum sharply separated from vertical surface of propodeum at middle by a rough horizontal area ----- 26a

⁶ For George B. Vogt (member 1950 to date), coleopterist.

As seen in dorsal view, postscutellum separated from vertical surface of propodeum at middle by at most a roughly rounded area ----- 27

26a. Base of second sternum with 10-12, strong, well separated longitudinal rugae, median basal groove well developed; interocellar area not tuberculate; posterior margin of parategula incurved; wing membrane very dark; Va. to Fla., La. ----- *histrion* (Lepeletier)

Base of second sternum with about 24 weaker, close longitudinal rugulae, median basal groove almost evanescent; interocellar area weakly tuberculate; posterior margin of parategula rounded out; wing membrane paler; Md. ----- *vogti*, new species.

Type ♀: Plummers Island, Md.; emerged 23 May 1958 in laboratory from nest P#155 stored in late August, 1957, K. V. Krombein. U. S. National Museum, Type No. 65886.

Female: Length to apex of second tergum 5.5 mm, wings deformed. Black, the following light yellow—spot at base of mandible, small triangular spot above interantennal crest, small transverse spot on humeral angle, spot at base of tegula, parategula, short band on postscutellum, small round spot on mesopleuron below pronotal lobe, narrow oblique spot anterolaterally and a narrow apical band on first tergum, slightly wider apical band on second tergum, small triangular posterolateral spot on second sternum; tegula testaceous; femora castaneous; tibiae and tarsi reddish brown. Wings not properly expanded so colors probably not typical. Pubescence grayish, inconspicuous.

Clypeus shallowly incised at apex and about as wide there as interantennal distance; front moderately swollen; interocellar area with low tubercles, not bridged behind front ocellus.

Humeral angle moderately prominent; parategula with posterior margin rounded outward; propodeum with a short pitted horizontal section at base.

First tergum wider than long, almost as wide as second, rather weakly punctate, the summit irregular but with a weak carina, the apical margin not thickened; second tergum with apical margin transverse, the apex very slightly thickened; second sternum at extreme base with about 24 short, close, longitudinal rugulae, the segment weakly swollen in profile, with scattered moderate punctures, and with the median basal groove almost evanescent.

Male: Unknown.

Family POMPILIDAE

Dipogon subgenus *Winnemanella*,⁷ new subgenus

This subgenus is known from the female only. It may be distinguished from the other subgenera, *Dipogon* Fox and *Deuteragenia* Sustera, by the ivory integumental spots on the clypeus, malar space and pronotum, the long malar space, the highly polished and very sparsely punctate

⁷ From Winnemana, the local Indian name for beautiful island.

front and thoracic dorsum, the greatly reduced maxillary beard and the clear, non-fasciate forewing. In addition, the maxillary beard is pale as in typical *Dipogon*, but the second and third cubital cells are subequal in length as in *Deuteragenia*.

Type of subgenus: Dipogon (Winnemanella) fulleri, new species.

Very small, the single known species 4 mm long with forewing 3.5 mm long; clypeus, malar space and pronotum with ivory integumental maculations; malar space longer than in other subgenera, its length at anterior mandibular condyle as great as width of a flagellar segment; maxillary beard consisting of a long curved fascicle of pale golden hair arising from each cardo, the fascicle composed of only about six hairs; front and thoracic dorsum highly polished and with scattered, minute punctures; notaulices elongate as in typical *Dipogon*; second and third submarginal cells subequal in length.

***Dipogon (Winnemanella) fulleri*,⁸ new species**

This is the only known species of the subgenus *Winnemanella*, and may be readily distinguished from our other *Dipogon* by the characters noted in the subgeneric discussion.

I presume that *fulleri* nests in abandoned borings of other insects in sound dead wood. I collected the type specimen as it crawled a few inches above the ground on the trunk of a standing dead, barked tree containing many insect borings. This tree is on moderately densely shaded bottomland several feet above the mean summer level of the Potomac River. O. L. Cartwright captured the paratype female in South Carolina as it crawled over the ground dragging its prey, a paralyzed jumping spider *Icius hartii* Emerton, Salticidae (det. W. J. Gertsch).

Type ♀: Plummers Island, Md.; 18 August 1960, K. V. Krombein. U. S. National Museum, Type No. 65887.

Female: Length 4 mm, forewing 3.5 mm. Black, except the following ivory—clypeus except a median triangular black mark on basal third, malar space, small spot anteriorly on side of pronotum, and the following fulvous—palpi, last eight flagellar segments, apices of coxae and fore and mid femora, most of hind femur, all tibiae and tarsi; wings pale, the stigma and veins testaceous.

Clypeus slightly arched, anterior margin unmodified, highly polished with a few long submarginal setae; front highly polished, rounded outward between eyes, and with scattered minute punctures; thoracic dorsum highly polished and with a few scattered punctures; notaulices elongate; mesopleuron and propodeum delicately shagreened, subopaque; abdomen subshining, with small, well-separated punctures.

Male: Unknown.

⁸ For my dear friend, and companion during many pleasurable days at the Island, Henry S. Fuller, M.D. (member 1949 to date), whose claim to hymenopterological fame is the discovery of a female European hornet sitting at the bar in Winnemana Lodge, the only time that this species has been taken on the Island.

Paratype: 1 ♀, St. George, S. C.; 26 May 1961, O. L. Cartwright. U.S.N.M. This is very similar to the type in most details but has the basitarsi somewhat infuscated, and the thoracic dorsum and abdomen somewhat less polished because of very delicate shagreening.

Family SPHECIDAE

***Trypoxylon (Trypoxylon) clarkei*,⁹ new species**

As will be evident from the complicated synonymy discussed under the next specific heading, the present species requires description as a new species. *T. clarkei* may be distinguished from its closest relative *T. johnsoni* Fox by the key which follows the description. It is known from New York, New Jersey, Pennsylvania, Maryland, District of Columbia, Virginia, and North Carolina. Additional collecting will probably demonstrate its presence in some of the other southeastern states.

I have reared it from two nests from Plummerville Island that were constructed in borings of 3.2 mm diameter in wooden blocks. These traps were attached to the side of a standing, dead, barked tree trunk in rather dense shade, the same tree on which the type of *Dipogon fulleri* was taken. The biology of *clarkei* will be discussed in a separate contribution treating the species reared from wooden trap nests.

Type ♂: Dunn Loring, Va.; 21 August 1949, K. V. Krombein; visiting honeydew secretions on tulip tree. U. S. National Museum, Type No. 65888, by transfer from author's collection.¹⁰

Male: Length 6.5 mm, forewing 4.8 mm. Black, the head dull, thorax and abdomen shining; the following light reddish—apex of mandible, apical margin of clypeus, fore and mid legs except tarsi, hind trochanter, hind femur except for some infuscation above, and hind tibia beneath; the following testaceous—palpi, scape and pedicel beneath, tegula, fore and mid tarsi, and hind tarsus entirely beneath and at apices of segments on upper side. Wings clear, stigma and veins brown. Vestiture silvery, short, appressed.

Clypeus with dense vestiture, the apical margin strongly and narrowly rounded out in middle and with a very weak blunt tooth on each side of the produced portion; front convex, strongly shagreened and with moderately large punctures separated from each other by about the diameter of a puncture; frontal keel extending one-third the distance from antennal foramina to anterior ocellus; front with a shallow median furrow from upper end of keel to anterior ocellus; ocellular line about as long as diameter of a posterior ocellus, and half as long as postocellar line; flagellum moderately clubbed, the fourth segment excavated beneath almost to apex, the eighth excavated beneath on basal third, the terminal segment as long as the preceding three segments combined.

⁹ For J. F. Gates Clarke (member 1955 to date), lepidopterist.

¹⁰ I am not selecting the type from Plummerville Island because the single male from that locality is in poor condition.

Scutum shining, the punctures small, shallow, and separated from each other by about the diameter of a puncture; dorsal surface of propodeum with a shallow median furrow, on each side of which are some weak oblique rugulae which do not extend to the marginal carina; posterior surface with a deeper median furrow on upper two-thirds; carina separating lateral from dorsal and posterior surfaces very weak, evanescent over most of posterior slope.

First abdominal segment stout, its apical width about half its length, with a weak shallow groove on basal third; eighth sternum and genitalia as figured by Sandhouse (1940, *Amer. Midland Nat.* 24: 172, 174, figs. 21, 48, 49, 50).

Allotype ♀: Plummers Island, Md.; 27 July 1961, K. V. Krombein; reared from nest K#146. U.S.N.M.

Female: Length 6.2 mm, forewing 4.5 mm. Similar to male in coloration but second and third abdominal segments light reddish except for a black blotch on posterior two-thirds of terga in middle.

Head similar to male except antennae not modified, clypeal lobe somewhat more strongly produced; and ocellular line only half as long as diameter of posterior ocellus, though it is still half as long as the post-ocellar line.

Scutum shining, but the small punctures denser than in male; propodeum as described for male.

Paratypes: 1 ♂, Plummers Island, Md., 24 July 1961, K. V. Krombein, reared from nest K#145; 1 ♂, "Va.," 24 August 1883 (illustrated by Sandhouse as *johnsoni*); 1 ♀, N. C.; 1 ♂, Washington, D. C. (labeled as U.S.N.M. Type No. 1873, *ornatipes*); 1 ♂, Hummelstown, Pa., J. N. Knull; 1 ♀, Marsh Run, York Co., Pa., 18 July 1909, P. R. Myers; 1 ♀, Delaware Water Gap, N.J., 12 July; 1 ♂, 1 ♀, Poughkeepsie, N. Y., 15 July 1936, H. K. Townes; 1 ♀, Six Mile Creek, Ithaca, N. Y., 17 July 1947, J. G. Franclemont; 1 ♂, 3 ♀ ♀, same locality as preceding but 20 and 21 July, and August 1939, P. P. Babi. Paratypes are in the U. S. National Museum, Academy of Natural Sciences, Philadelphia, and the author's personal collection.

Male paratypes range from 6 to 7 mm in length. They exhibit very little variation in coloration, but in several the rugae are entirely lacking on the dorsal surface of the propodeum, one specimen lacks the small blunt tooth on each side of the clypeal lobe, and in several this tooth is better developed than in the type.

Female paratypes are 7 to 8 mm long. They agree well with the allotype in details of the sculpture, but in three specimens the black areas on second and third terga are somewhat less extensive.

The following key will separate the two closely allied species of Group Fabricator, and should be substituted for couplet 2 of Sandhouse's key.

Carina separating dorsal and lateral surfaces of propodeum strong, the dorsal surface usually with rather strong rugulae many of which extend to the lateral carina though they may be interrupted; scutum usually duller and with somewhat larger punctures; post-

ocellar line about three times as long as ocellocular line. ♂♂: Paramere of genitalia narrower; clypeus with median lobe usually weakly produced and without a tooth on either side; last flagellar segment as long as preceding five joints combined. ♀♀: Clypeus with median lobe usually weakly produced, but always with apex slightly emarginate; light red areas on abdomen quite reduced.

----- *johnsoni* Fox
 Carina separating dorsal and lateral surfaces of propodeum weaker, the dorsal surface without rugulae or with very weak ones which do not extend to the lateral carina; scutum usually more shining and with smaller punctures; postocellar line not more than twice the ocellocular line. ♂♂: Paramere of genitalia broad; clypeus with median lobe usually more produced and strongly rounded, and with a weak rounded tooth on each side of median lobe; last flagellar segment as long as preceding three joints combined. ♀♀: Clypeus with median lobe strongly produced and rounded out; light-red markings on abdomen more extensive ----- *clarkei*, n. sp.

Trypoxylon (Trypoxylon) johnsoni Fox

Trypoxylon Johnsoni Fox, 1891. Trans. Amer. Ent. Soc. 18: 147. ♀.
 (Type from Florida, in Academy of Natural Sciences).

Trypoxylon ornatipes Fox, 1891. Trans. Amer. Ent. Soc. 18: 148. ♂.
 (Type from District of Columbia in Academy of Natural Sciences; cotype (?) from D. C. in U. S. National Museum.)

Trypoxylon (Trypoxylon) adelphiae Sandhouse, 1940. Amer. Midland Nat. 24: 151. ♂, ♀. (Type from Tennessee in U. S. National Museum; allotype from Virginia in Museum of Comparative Zoology.) NEW SYNONYMY.

The synonymy proposed above is based on a recent critical study of the type series of these three species which are on deposit in the U. S. National Museum, Academy of Natural Sciences of Philadelphia, and Museum of Comparative Zoology. The three holotypes agree with the characters ascribed to *johnsoni* Fox in the key above except that it was not possible to dissect the genitalia from the type of *ornatipes*. However, the type of *ornatipes* agrees with the external characters listed for males of *johnsoni*, and I have no hesitancy in confirming its synonymy under *johnsoni* as proposed in Sandhouse's revision.

I think that the confusion which led to Sandhouse's description of *adelphiae* as a new species was caused in part by the mixed type series of *ornatipes*. The true type, a male, is in Philadelphia; it is the opposite sex of *johnsoni*. However, there is another male from D. C. in the National Museum which bears a red Museum type label. Fox does not state how many specimens he had in his series so this specimen may not even belong to the type series. However, it is a specimen of what I described above as *clarkei*. Sandhouse extracted the genitalia from the male from "Va.," listed above as a paratype of *clarkei*, and based her interpretation of *johnsoni* genitalia on that specimen. Hence, when she

got a male of a closely related species from Tennessee with obviously different genitalia, she described it as a new species rather than recognizing it as true *johnsoni*. The allotype female of *adelphiae* from Virginia is also a specimen of *johnsoni*.

***Spilomena barberi*,¹¹ new species**

S. barberi may be distinguished at once from the other species of *Spilomena* in the United States by the rather dense, appressed, short silvery vestiture on the front, scutum, and apices of the third to sixth terga which gives the species a somewhat griseous appearance. In addition, the combination of the following characters will serve to separate it from its eastern congeners, *pusilla* (Say), *alboclypeata* Bradley, and *ampliceps* Krombein: marginal cell of forewing with scattered minute setae; pronotum without a carina extending laterally onto the lobe; propodeal dorsum with a broad U-shaped area delimited by a strong carina; female with greatest width of temple a little less than that of eye; male with face immaculate above clypeus and the lower lateral spots; male flagellum with suberect short setae; and third and fourth sterna of male with dense, appressed, short setae.

Type ♂: Arlington, Va.; 22 May 1954, K. V. Krombein; on wooden wall of old cowshed at my home. U. S. National Museum, Type No. 65889, by transfer from author's personal collection.¹²

Male: Length 2.8 mm, forewing 2.0 mm. Black, without metallic reflections, the following creamy—mandible except apical teeth, clypeus, malar space, postmandibular triangle, and subrectangular spot along lower inner eye margin extending about one-third of distance to top of eye, and antennal scape; the following testaceous—mandibular teeth, pedicel, tegula, and legs except hind coxa and femur. Pubescence generally much denser than in other species, short, appressed and pale, rather dense on front, vertex, scutum, mesopleuron, across apical third of third to sixth terga, and on third to sixth sterna. Wings clear hyaline with iridescent reflections; stigma brown, veins testaceous.

Head subshining from delicate lineolation and the appressed vestiture; in frontal view subcircular; viewed from above the head behind the eyes a little shorter than dorsal eye length; viewed from the side the cheek not angulate at middle, about as wide as eye width; scape half as long as clypeal width at anterior mandibular condyles; postocellar distance 0.6 times the ocellular distance and subequal to the ocelloccipital distance; front with a very weak median carina on lower half.

Thorax rather dull from appressed vestiture and moderately strong lineolation on scutum; pronotum dorsally with a complete carina which does not extend laterally onto lobe; notauli evanescent; mesopleuron delicately lineolate, the episternal suture very weakly foveolate; meta-

¹¹ For Herbert S. Barber (member 1901–1950), peerless naturalist and coleopterist, who collected many specimens on which my Plummers Island wasp list will be based.

¹² The type is not selected from Plummers Island because of the short series and absence of males from that locality.

pleuron smooth; propodeum dull from strong lineolation, the lateral surface with a few oblique rugulae and a carina separating it from posterior surface; posterior surface with a strong median carina and some weak transverse rugulae; dorsal surface with a broad U-shaped area delimited by a sharp carina, the enclosed area with two strong longitudinal and several transverse carinae.

Second submarginal cell rectangular, 0.6 as high as wide; first recurrent vein received a little basad of first transverse cubital.

Abdomen without modification except for that noted under vestiture.

Allotype: ♀, with identical label data, U.S.N.M.

Female: Length 2.8 mm, forewing 2.0 mm. Black, without metallic reflections, the following testaceous—mandible, scape, pedicel, antenna beneath except at apex, tegula, and legs except hind coxa and femur. Vestiture similar to that of male except sterna with short appressed hair on apical third only. Wings as in male.

Head rather dull from fine lineolation, subcircular in frontal view, similar to male in sculpture and vestiture; proportions of head similar to male; clypeus with a narrow trigonal platform in middle, the apex slightly emarginate; upper part of clypeus with a weak median carina which continues upward on front, becoming evanescent about one-third the distance to anterior ocellus.

Thorax similar to male except mesopleuron shinier because of weaker lineolation and more scattered setae.

Venation as in male except first recurrent is slightly distad of first transverse cubital vein.

Legs and abdomen not modified except as described under vestiture.

Paratypes: 26♂♂, 70♀♀, same locality as type, with the following dates: 1951—June 9 (1♀), 12 (1♀), 16 (1♀), September 3 (2♀♀), 9 (2♀♀), 10 (1♀), 15 (1♀), 22 (4♀♀), 23 (1♀); 1952—May 14 (1♂, 1♀), June 6 (1♀), 9 (1♂, 1♀), 15 (1♂), 24 (1♀), July 4 (1♀), 5 (2♀♀), 6 (2♀♀), 12 (1♀), August 12 (1♀), 13 (1♀), 23 (1♀), September 6 (1♀); 1953—May 30 (1♂), June 3 (1♂), 4 (1♀), 8 (1♀), 9 (1♀), 18 (1♂), July 25 (2♀♀), 28 (5♀♀), August 8 (1♀), 12 (2♀♀), 22 (2♀♀), 30 (2♀♀), September 5 (1♀), 7 (1♀), 12 (2♀♀), 19 (1♂, 2♀♀), 26 (1♀), October 3 (1♀); 1954—May 1 (1♂), 2 (1♂), 22 (3♂♂), 23 (4♂♂), 26 (1♀), 28 (1♂, 1♀), 29 (1♀), 31 (2♂♂), June 5 (3♀♀), 6 (3♂♂, 1♀), 12 (1♀), 14 (1♂); 1955—May 21 (1♂), 22 (1♂, 1♀), June 12 (1♂, 1♀); 1956—June 9 (1♀); 1957—May 26 (2♀♀), August 24 (1♀), September 1 (1♀), 15 (1♀), 21 (1♀). 1♀, Glencarlyn, Arlington Co., Va., 4 September 1954, K. V. Krombein; visiting extrafloral nectaries of *Cassia nictitans*. 1♀, McLean, Va., 7 August 1954, K. V. Krombein. 1♀, 1♂, Falls Church, Va., 26 July 1917, S. A. Rohwer; Hopkins No. 1077a; visiting aphids, presumably for nectar. 1♀, Blacksburg, Va., W. J. Schoene; *ex Xyletinus peltatus*. 3♀♀, Plummers Island, Md., 31 July 1958, 28 May 1959, and 13 June 1961, K. V. Krombein; on beams

in cabin roof. 3 ♀ ♀, 2 ♂ ♂, Washington, D. C. 29 May 1908, 1 ♂, J. C. Crawford; no other data: 1 ♀, 1 ♂, Ashmead coll.; 26 May 1914, 1 ♀, P. R. Myers; 8 September 1952, 1 ♀, R. Boettcher. 1 ♂, Wake Co., N. C., 19 May 1940, R. Barnes. 1 ♂, Raleigh, N. C., 20 September 1947, M. W. Wing; at light. 1 ♀, Athens, Ga., 15 June 1909, J. C. Bradley. 2 ♂ ♂, Cloudland Canyon State Park, Ga., 8 May 1952, O. Peck. 1 ♀, Gatlinburg, Tenn., 15 July 1947, R. H. Whittaker; swept in pine-oak forest, 1,500 ft elev. 1 ♀, Harriman, Tenn., 2 August 1933, H. G. Butler. 1 ♂, Presque Isle State Park, Pa., 28 June 1961, F. E. Kurczewski. 1 ♀, 1 ♂, N. J., Ashmead coll.; on same pin mount. 1 ♀, Moorestown, N. J., 6 August 1939, H. and M. Townes. 1 ♀, Millwood, N. Y., 20 June 1936, J. G. Franclemont. 4 ♀ ♀, Ithaca, N. Y., 23 June 1929, P. P. Babi; 16 June 1935, Babi; 7 August 1936, Babi; 20 June 1953, A. Stone. 1 ♀, Medford, Mass., 11 July 1927, W. A. Baker. 2 ♀ ♀, 1 ♂, Ottawa, Can. 1 ♀, Toronto, Can., 17-7-7. 1 ♀, 1 ♂, Port Dalhousie, Can., 10 July 1939 (♂), 15 August 1940 (♀). 2 ♀ ♀, Sioux City, Iowa, May 1936, C. N. Ainslie. 1 ♀, Lawrence, Kans., 23 May 1941, H. K. Townes. 1 ♂, Fort Collins, Colo., 15 June 1896, C. F. Baker. 1 ♀, Santa Fe, N. Mex., August 1915, Cockerell. 1 ♀, Mesilla, N. Mex., 28 June 1897, A. P. Morse. 1 ♀, Rio Grande, Taos Co., N. Mex., 6 July 1953, W. W. Wirth. 1 ♂, Tucson, Ariz., 10 June 1897, R. E. Kunze. 1 ♀, Zion Canyon, Utah, 23 June 1950. 1 ♀, Riverside, Calif., 30 October 1925, P. H. Timberlake; on *Euphorbia albomarginata*. Paratypes are in the collections of the U. S. National Museum, Cornell University, Canadian National Collection, H. K. Townes, P. H. Timberlake, and the author.

Male paratypes range from 2.3 to 2.8 mm in length. They agree in all important details with the type except that eight have the upper third of the clypeus between the antennae dark, and several have the front and mesopleuron shinier because of weaker lineolations on those parts.

Female paratypes range from 2.5 to 2.8 mm in length. Most of them are very similar to the allotype, but some have the femora and tibiae somewhat infuscated, and in some the lineolations are weaker so that the head and thorax have a shinier appearance.

Twelve additional females and two males of *S. barberi* have been excluded from the type series because of poor condition. These are from Arlington, Va., Gatlinburg, Tenn., Utica, Miss., Wilawana, Pa., Ithaca, N. Y., Ottawa, Can., and Tucson, Ariz. Also, I have seen two females labeled Concepcion, Guatemala, 1,400 ft elev. (C. N. Ainslie) that appear to be *barberi*. I have not included them in the type series because of the possibility of an erroneous locality label.

Eleven females (71252A, 72553D, 72853H, 72853I, 91953B, 52854A, 6554A, 6554B, 6654A, 52657A, and 91557A) captured in Arlington were taken with prey. Each was caught near her burrow entrance in boards in the cowshed wall. Each was carrying a paralyzed, immature, pale-green thrips in her mandibles. The thrips ranged from 0.6 to 1.0 mm in length.

These females were bringing in prey as early as 0953 and as late as 1815 hours, and from May through September. Three of the thrips were identified as a first-instar nymph belonging to the Thripidae, a second-instar thripid nymph, either *Frankliniella* or *Thrips*, and a nymph of *Sericothrips* (all det. by K. O'Neill).

Spilomena barberi nests in old anobiid borings made by *Xyletinus peltatus* at my home in Arlington. These borings are about 2 mm in diameter. The wasp does not build a turret of beetle frass at the burrow entrance as does *S. pusilla* (Say).

Gorytes (Gorytes) mcateei¹³ Krombein and Bohart, new species

This species is known from the female only. It is similar to most of our Eastern *Gorytes* in color pattern, and is perhaps closest to *deceptor* Krombein with which it agrees in the quite weakly sculptured propodeum and non-foveolate metapleural-propodeal suture. It may be readily distinguished from *deceptor* by the much narrower pygidium (30° at apex compared to 45°), the lack of scattered larger punctures on front, the lack of paired yellow spots on the propodeum, and the reduction of the yellow stripe at apex of fifth tergum to the middle half or two-thirds instead of being complete as in *deceptor*.

Type ♀: Plummers Island, Md.; 6 June 1959, K. V. Krombein. U. S. National Museum, Type No. 65890.

Female: Length 9 mm; forewing 7 mm. Black and shining, the following lemon yellow—palpi, labrum, clypeus except narrow apical margin, supraclypeal area, narrow stripe along inner eye margin extending from base of clypeus two-thirds of distance to anterior ocellus, antenna beneath, narrow transverse stripe on dorsum of pronotum, band on posterior two-thirds of scutellum, small spot on mesopleuron adjacent to tubercle, apical bands on first to fifth terga, that on first narrowly emarginate anteriorly in middle, that of second broadly and shallowly emarginate anteriorly, those of third and fourth narrower and narrowed laterally on anterior margin, that of fifth reduced to a transverse spot half as wide as segment, attenuate spot posterolaterally on second and third sterna, femora narrowly at apices, fore and mid tibiae except for some infuscation beneath, hind tibia beneath and on basal half of outer surface, and fore and mid tarsi. Wings clear except marginal cell moderately infuscated, and upper part of basal vein and second submarginal cell each with a vague infuscated area; stigma and veins brown.

Front with close minute punctures; least interocular distance 1.1 times the eye breadth; supraclypeal area about as broad as high; antennal insertion less than its diameter from inner eye margin; flagellum moderately clubbed toward apex; vertex and thorax except propodeum with

¹³ For W. L. McAtee (member 1905 to date), specialist in Hemiptera who collected some wasps on the Island.

We are publishing this description in advance of a generic revision so that the name will be available for use in the senior author's annotated list of Plummers Island wasps.

minute well-separated punctures; metapleural-propodeal suture well-developed for its whole length, but not foveolate on any sector; propodeal enclosure delimited by foveolate grooves, with narrow central furrow on either side of which are about eight weak rugae that extend almost to apex; posterior surface of propodeum and area above hind coxa with some short vertical rugae extending about halfway to upper horizontal surface; pygidium triangular, very narrow, its apical angle about 30°, the basal width about half the length, the surface shining and with scattered small punctures.

Male: Unknown.

Paratypes: 1 ♀, topotypic, 3 June 1960, K. V. Krombein; 1 ♀, Washington, D. C., 17 June 1944, M. Vogel; 1 ♀, Dunn Loring, Va., 26 June 1949, K. V. Krombein; 1 ♀, Great Falls, Va., 23 June, N. Banks; 2 ♀ ♀, Chain Bridge, Va., 23 June, N. Banks; 2 ♀ ♀, Glencarlyn, Va., 2 July, N. Banks; 1 ♀, Castle Rock, Pa., 19 June 1910, G. M. Greene; 1 ♀, Poughkeepsie, N. Y., 18 July 1936, H. K. Townes. Paratypes are in the collections of the U. S. National Museum, University of California at Davis, Museum of Comparative Zoology, and the senior author. Paratypes vary in length from 9 to 11 mm. They are quite similar in coloration and sculpture except that in the single topotypic specimen the rugae of the propodeal enclosure extend only about half the distance to the apex.

***Crossocerus (Crossocerus) spangleri*,¹⁴ new species**

The male of this rare species is distinguished from any of our American species by the distorted fore basitarsus and the modified fore femur. The female is very similar in appearance to *C. lentus* (Fox) but is slightly larger, and has a better developed median tooth on the apical margin of the clypeus.

The dates of capture of the two males, 30 May and 18 July, suggest that the species is multivoltine. It is presumed to nest in the ground, as do most other members of the typical subgenus, because several females were captured on the ground. Three females were collected on coarse alluvial sand several feet above the mean summer level of the river and others were taken on soil near the cabin.

Type ♂: 18 July 1956, K. V. Krombein; collected in a boring of 3.2 mm diameter in a wooden block placed under firewood near outdoor fireplace. U. S. National Museum, Type No. 65891.

Male: Length 4.8 mm, forewing 3.5 mm. Black, the following yellow—palpi, mandible except apex which is reddish, apical half of clypeus, small area around base of mandible, scape beneath, pronotal tubercle, anterior face of mesopleuron and extreme base of lateral surface, fore and mid legs, hind coxa beneath, hind trochanter, hind tibia outwardly, hind tibia spurs and hind tarsus except apical segment. Wings clear, stigma dark brown, veins testaceous.

¹⁴ For Paul J. Spangler (member 1960 to date), coleopterist, who collected part of the type series, and who captured the only specimen of *Nysson opulentus* Gerst. recorded so far from the Island.

Clypeus with dense, short decumbent silvery vestiture, the apical margin very weakly tridentate; first five flagellar segments with a fringe of short erect setae beneath, the apical segment cylindrical in cross section, not curved or flattened; top of head shining with moderately scattered, fine punctures; supraorbital fovea not developed.

Thorax with short, decumbent silvery vestiture which is denser on sternum; pronotum with a weak, short, transverse carina at anterior angle, the posterior margin strongly impressed; scutum and scutellum slightly subopaque with fine punctures separated by several times the diameter of a puncture; mesopleuron glossy and punctured like scutum, without a tubercle before mid coxa; propodeum glossy, the enclosure margined by foveolae and bisected by a narrow, cuneate, foveolate channel; lateral and posterior surfaces finely, horizontally striate, separated by a strong vertical carina, posterior surface with a median furrow.

Fore femur somewhat expanded, slightly flattened beneath, with a strong acute tooth beneath along posterior margin, the tooth with a strong seta at tip; fore basitarsus as long as remainder of tarsus, anterior margin strongly rounded outward, somewhat concave and with a brush of dense short setae beneath, viewed from in front concave above; legs otherwise unmodified.

Allotype ♀: topotypic; 11 June 1957, K. V. Krombein. U.S.N.M.

Female: Length 4.8 mm, forewing 3.5 mm. Black, the following light yellow: Palpi, scape beneath, short line on pronotal dorsum not connected with spot on tubercle, transverse mark anteriorly on scutellum, fore and mid tibiae except latter beneath, hind tibia on basal third and a narrow stripe on outer surface reaching almost to apex; all tarsi except apical segment. Mandible light red except black at base and apex. Wings as in male.

Clypeus with apical margin strongly tridentate, the teeth rounded; punctation as in male though comparatively denser and larger. Thorax also sculptured similarly to that of male, but punctures comparatively larger and denser, striae of propodeum stronger, and pronotum not carinate at anterior angle.

Paratypes: All topotypic; 1 ♂, 30 May 1959, K. V. Krombein; 2 ♀ ♀, 21 June 1960, P. J. Spangler (on sand); 1 ♀, 25 June 1960, K. V. Krombein (on sand). The male paratype is similar to the type in all details but the yellow is slightly cyanided. The female paratypes agree in sculptural details with the allotype, but one has reduced yellow maculations as follows—pronotum black including tubercle except for a pair of tiny spots on dorsal surface, scutellum black, yellow on mid and posterior tibiae somewhat reduced, and tarsi infuscated.